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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,579	02/19/2004	Makoto Onozawa	1450.1036	2523
21171	7590	07/26/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			AL NAZER, LEITH A	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/780,579	<b>Applicant(s)</b> ONOZAWA ET AL.	
	<b>Examiner</b> Leith A. Al-Nazer	<b>Art Unit</b> 2821	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>19 February 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:  
Reference number 416 shown in figure 4C is not addressed in the specification.  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. Claims 1-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a first switching element having a high-speed switching performance and a second switching element having a low-saturation-voltage performance..." The terms "high-speed switching" and "low-saturation-voltage" are relative terms, and, therefore, they are vague and indefinite as they fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2821

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-34 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S.

Patent Application Publication No. 2002/0175883 to Onozawa et al.

With respect to claims 1 and 24, Onozawa teaches a plasma display device comprising: a plurality of first electrodes (X1-Xn; figure 1); a plurality of second electrodes (Y1-Yn; figure 1) disposed nearly in parallel with the plurality of first electrodes so as to configure a display cell together therewith, and so as to activate electric discharge between themselves and the first electrode composing the display cell; a first electrode drive circuit (3) for applying discharge voltage to the plurality of first electrodes; and a second electrode drive circuit (5) for applying discharge voltage to the plurality of second electrodes; wherein at least either one of the first and second electrode drive circuits comprises a parallel circuit (figure 2) in which a first switching element having a high-speed switching performance and a second switching element having a low-saturation-voltage performance are connected in parallel (paragraphs 0007-0009).

With respect to claims 2, 6, 10, 14, and 20, Onozawa teaches the first switching element being a power MOSFET (paragraph 0037).

With respect to claims 3, 7, 11, 15, and 21, Onozawa teaches the second switching element being an IGBT (paragraph 0037).

With respect to claims 4, 8, 12, 16, and 22, Onozawa teaches the first switching element being a power MOSFET, and the second switching element being an IGBT (paragraph 0037).

With respect to claims 5 and 19, Onozawa teaches the second switching element being turned on at least during a period that discharge current flows between the first electrodes and the second electrodes (paragraphs 0003-0011).

With respect to claim 9, Onozawa teaches the second electrode drive circuit further comprising a sustain circuit (21) for outputting sustain discharge voltage for activating electric discharge associated with light emission in the display cell, the sustain circuit comprising a parallel circuit in which the first switching element (Q23) and the second switching element (Q24) are connected in parallel (figure 5).

With respect to claims 13, 26, 27, and 30, Onozawa teaches the sustain circuit further comprising a higher-potential-side switching circuit for supplying a first potential in relation to the sustain discharge voltage to the electrodes configuring the display cell, and a lower-potential-side switching circuit for supplying a second potential in relation to the sustain discharge voltage, lower than the first potential; the higher-potential-side switching circuit and the lower-potential-side switching circuit respectively having the parallel circuit in which the first switching element and the second switching element are connected in parallel (figure 5; paragraph 0011).

With respect to claims 17 and 28, Onozawa teaches the electrode drive circuit further comprising a power recovery circuit connected to the electrode configuring the display cell (paragraph 0037).

With respect to claims 18, 29, and 33, Onozawa teaches the electrode drive circuit further comprising a power recovery switch connected via a coil to the electrode configuring the display cell (paragraph 0037).

With respect to claim 23, Onozawa teaches the first switching element and the second switching element almost coinciding with each other in their input threshold voltage characteristics (paragraphs 0007-0009).

With respect to claim 25, Onozawa teaches a switching time of the first switching element being shorter than that of the second switching element (paragraphs 0007-0009).

With respect to claim 31, Onozawa teaches one terminal of the power recovery switch being connected via the coil to the electrode configuring the display cell, and the other terminal being connected to a ground terminal (paragraph 0037).

With respect to claim 32, Onozawa teaches a reset voltage for initializing the display cell being superposed to the reference voltage of the lower-potential-side switching circuit during a period that the reset voltage is supplied to the electrode configuring the display cell (paragraphs 0004-0006).

With respect to claim 34, Onozawa teaches one terminal of the power recovery switch being connected via a coil to the electrode configuring the display cell, and a voltage synchronized with the reset voltage for initializing the display cell being superposed to the other terminal of the power recovery switch during a period that the reset voltage is supplied to the electrode configuring the display cell (paragraph 0037).

***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A. Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA



**HOANG V. NGUYEN  
PRIMARY EXAMINER**